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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,178	03/24/2005	Brian Cottrell	3009-1015	2058

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EXAMINER

CHERRY, STEPHEN J

ART UNIT	PAPER NUMBER
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2863

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,178

Applicant(s)

COTTRELL, BRIAN

Examiner

Stephen J. Cherry

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4-18-06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

In view of the Petition decision dated 3-27-2007, this is a re-mailing of the Office Action dated 6-28-2006. A rejection under 35 U.S.C. 101 has been removed to reflect current office policy.

Information Disclosure Statement

The information disclosure statement filed 4-18-2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because this listed patent, 6,262,660 is not to the inventor named on Information Disclosure Statement. It has been placed in the application file, but the information referred to therein regarding '660 citation has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-11, 13-16, 19, 21-24, and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,120,214 to West et al.

Regarding claim 1, West discloses a method of monitoring an energy conversion appliance of a kind which involves a combustion process and which, in normal use, performs two or more operational events in a pre-determined sequence, each said event having a different acoustic signature ('214, fig. 1, and col. 5, line 56), said method comprising providing a sound receiving transducer and positioning said transducer to receive sound signals emitted by the appliance during two or more operational events, one of said operational events comprising a fluid flow event which is related to the process of combustion and a second of said operational events comprising operation of a mechanical or electro-mechanical device ('214, fig. 1, ref 101, position near flame and would receive other sounds of burner), providing output means associated with said sound receiving transducer, said output means being responsive to the sound emitted by the appliance ('214, fig. 1, ref. 103), and employing a monitoring means to compare said received sound signals with pre-established data ('214, col. 9, line 61).

Regarding claim 4, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, wherein the monitoring means is operable to determine whether an acoustic signature indicative of an operational event is concomitant with normal performance of that operational event ('214, col. 9, line 61, expressed in output firing rate).

Regarding claim 5, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, wherein the output means is responsive to occurrences of the sound emitted by the appliance, or by a single operational event, departing from said sound profile concomitant with proper functioning of the appliance or said operational event ('214, col. 9, line 61, expressed in output firing rate).

Regarding claim 6, and in view of the rejection of claim 5 above, West discloses a method according to claim 5, wherein the output means is responsive only if the emitted sound lies beyond a pre-established threshold level ('214, col. 9, line 20, expressed in output firing rate).

Regarding claim 7, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, wherein the appliance comprises a protective enclosure which protects the appliance from the surrounding environment and within which enclosure said two or more operational events occur, said method comprising providing said sound receiving transducer within said enclosure ('214, fig. 1, ref. 5).

Regarding claim 8, and in view of the rejection of claim 1 above, West discloses a method according to claim 1 and comprising employing the output means to transmit signals related to the acoustic signatures of events within the operating sequence of the

appliance to remote data processing means ('214, fig. 1, ref. 103 transmits to ref. 107, 109, and 43)).

Regarding claim 9, and in view of the rejection of claim 8 above, West discloses a method according to claim 8, wherein said transmission of signals from the output means occurs daily on a regular basis ('214, col. 9, line 64).

Regarding claim 10, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, wherein said operational event which comprises operation of a mechanical or electromechanical device comprises at least one of operation of a pump, operation of a relay, and flow of liquid or gas through a pipe ('214, col. 10, line 1).

Regarding claim 11, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, wherein said fluid flow event which is related to the process of combustion comprises the flow of gas or liquid fuel to or through a combustion zone or flow of combustion products from the combustion zone ('214, col. 10, line 1, and fig. 1).

Regarding claim 13, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, wherein the output means either substantially directly, or substantially indirectly via remote data processing means, causes operation of an alarm when the sound emitted by the appliance departs from a sound profile concomitant with proper functioning of the appliance ('214, col. 10, line 17).

Regarding claim 14, and in view of the rejection of claim 13 above, West discloses a method according to claim 13, wherein the alarm is an audible alarm in the vicinity of the appliance ('214, col. 10, line 17).

Regarding claim 15, and in view of the rejection of claim 13 above, West discloses a method according to claim 13, wherein an alarm is actuated at a position remote from the appliance ('214, col. 10, line 17, alarm is inherently somewhat remote from flame to prevent damage from heat).

Regarding claim 16, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, wherein the monitoring means is operable to cause shutting down of the appliance in the event of the acoustic signature of an operational event departing by a pre-determined amount from an acoustic signature concomitant with proper functioning of that operational event ('214, col. 10, line 1, sound causes reduction of flame during adjustment).

Regarding claim 19, and in view of the rejection of claim 1 above, West discloses a method according to claim 1, and providing to the monitoring means signals from transducers of a non-acoustic type ('214, col. 7, line 38).

Regarding claim 21, and in view of the rejection of claim 1 above, West discloses a diagnostic tool for an energy conversion appliance of a kind which, in normal use, performs two or more operational events in a pre-determined sequence and each said event having a different acoustic signature, said diagnostic tool being adapted for performing a method in accordance with claim 1 ('214, fig. 1, ref. 43).

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Regarding claim 22, and in view of the rejection of claim 1 above, West discloses a diagnostic tool for an energy conversion appliance of a kind which involves a combustion process and which, in normal use, performs two or more operational events in a pre-determined sequence and each said event having a different acoustic signature, one of said operational events comprising a fluid flow event which is related to the process of combustion and a second of said operational events comprising operation of a mechanical or electro-mechanical device ('214, fig. 1), said diagnostic tool comprising a sound receiving transducer coupled to output and monitoring means to identify, discriminate and log the acoustic signatures of said operational events within the operating sequence of the appliance ('214, fig. 1, ref 101, position near flame and would receive other sounds of burner), said monitoring means being operable to compare said received acoustic signatures with pre-established data ('214, col. 9, line 61).

Regarding claim 23, and in view of the rejection of claim 22 above, West discloses a diagnostic tool according to claim 22, wherein means is provided to transmit to remote data processing means signals related to the acoustic signatures of operating events within the operating sequence of the appliance ('214, col. 8, line 45).

Regarding claim 24, and in view of the rejection of claim 22 above, West discloses a diagnostic tool according to claim 22, wherein the energy conversion appliance comprises a protective enclosure within which said operational events occur, the or each sound receiving transducer being provided within said enclosure ('214, fig. 1, ref. 5, with 101 extending within the enclosure).

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Regarding claim 26, and in view of the rejection of claim 22 above, West discloses a diagnostic tool according to claim 22 , wherein said sound receiving transducer is receptive to an acoustic signature related to the process of combustion and which comprises the flow of gas or liquid fuel to or through a combustion zone or flow of combustion products from the combustion zone ('214, col. 9, line 20).

Regarding claim 27, and in view of the rejection of claim 22 above, West discloses a diagnostic tool according to claim 22, wherein said sound receiving transducer is receptive to the acoustic signature associated with an operational event which comprises at least one of operation of a pump, operation of a relay, and flow of a liquid or gas through a pipe ('214, col. 10, line 1).

Regarding claim 28, and in view of the rejection of claim 22 above, West discloses a diagnostic tool according to claim 22 , wherein the output or monitoring means has coupled thereto a transducer of a kind responsive to signals other than sound ('214, col. 7, line 38).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 12, 17-18, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,120,214 to West et al in view of GB 2156520 to Carr-Brion.

Regarding claims 2-3, 12, 17-18, and 25, West discloses a method of monitoring an energy conversion appliance of a kind which involves a combustion process and which, in normal use, performs two or more operational events in a pre-determined sequence, each said event having a different acoustic signature ('214, fig. 1, and col. 5, line 56), said method comprising providing a sound receiving transducer and positioning said transducer to receive sound signals emitted by the appliance during two or more operational events, one of said operational events comprising a fluid flow event which is related to the process of combustion and a second of said operational events comprising operation of a mechanical or electro-mechanical device ('214, fig. 1, ref 101, position near flame and would receive other sounds of burner), providing output means associated with said sound receiving transducer, said output means being responsive to the sound emitted by the appliance ('214, fig. 1, ref. 103), and employing a monitoring means to compare said received sound signals with pre-established data ('214, col. 9, line 61), and

West discloses a diagnostic tool for an energy conversion appliance of a kind which involves a combustion process and which, in normal use, performs two or more operational events in a pre-determined sequence and each said event having a different acoustic signature, one of said operational events comprising a fluid flow event which is related to the process of combustion and a second of said operational events

comprising operation of a mechanical or electro-mechanical device ('214, fig. 1), said diagnostic tool comprising a sound receiving transducer coupled to output and monitoring means to identify, discriminate and log the acoustic signatures of said operational events within the operating sequence of the appliance ('214, fig. 1, ref 101, position near flame and would receive other sounds of burner), said monitoring means being operable to compare said received acoustic signatures with pre-established data ('214, col. 9, line 61).

However, West does not detect the occurrences of positions of events in sequences.

The claims further recite detecting the positions of sounds in sequences with a plurality of different sensors ('520, page 1, line 67) and comparing with baseline data to detect faults in the position of sounds in a series of steps to determine correct operation ('520, page 2, line 70).

Thus, it would have been obvious to one of ordinary skill in the art to combine the invention of West with the sequence detection of Carr-Brion to provide protection of equipment and persons ('520, page 1, line 1).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Cherry whose telephone number is (571) 272-2272. The examiner can normally be reached on M-F 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SJC



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